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BEFORE THE

# Federal Communications Commission

WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

In the Matter of )

Rulemaking to Amend Parts 1, 2, 21, and 25 of the )  
Commission's Rules to Redesignate the )  
27.5-29.5 GHz Frequency band, to Reallocate )  
the 29.5-30.0 GHz Frequency Band, to Establish )  
Rules and Policies for Local Multipoint Distribution )  
Service and for Fixed Satellite Services )

CC Docket No. 92-297

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To: The Commission

## PETITION OF TRW INC. FOR CLARIFICATION AND/OR PARTIAL RECONSIDERATION OF THE FIRST REPORT AND ORDER

TRW Inc. ("TRW"), by its attorneys and pursuant to Section 1.429 of the Commission's Rules, hereby requests the Commission to clarify — and revise as necessary — one of the rule provisions that was promulgated in Appendix B to the First Report and Order in the above-captioned proceeding.<sup>1/</sup> As TRW explains below, portions of new Section 25.258 of the Commission's rules do not reflect with complete accuracy the understandings that were reached earlier this year between TRW — as a representative nongeostationary mobile satellite system ("NGSO MSS") feeder link

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<sup>1/</sup> Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, FCC 96-311 (released July 22, 1996) ("First Report and Order"). The First Report and Order was published in the Federal Register on August 28, 1996. See 61 Fed. Reg. 44177.

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operator — and the applicants for Commission authority to establish geostationary fixed-satellite service (“GSO FSS”) systems that would use the bands 29.25-29.5 GHz for uplink operations. New Section 25.258 should be reformed in the manner described in Appendix 1 hereto to correspond with the understandings and principles that were articulated by the interested parties, and that were reported in the text of the Commission’s action to have formed the basis of the rules themselves.

TRW emphasizes that it is not seeking reconsideration of the text of the First Report and Order. The section of the decision that addresses co-frequency sharing between TRW’s NGSO MSS system and the GSO FSS systems that are proposed for operation in the band 29.25-29.5 GHz correctly reflects the agreements taken and points to the appropriate source documents.<sup>2/</sup> Somewhere along the line, however, it appears that when the agreed principles were transformed into regulations, some key elements were lost in the translation. TRW is seeking only to have the rules revised to the extent necessary to reflect accurately and clearly the intent as conveyed in the appropriate agreements and understandings in principle.

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<sup>2/</sup> See, e.g., First Report and Order, FCC 96-311, slip op. at ¶¶ 72-74 & n.129 (citing *ex parte* submission filed by the International Bureau to William F. Caton (Feb. 6, 1996): *Co-Directional Frequency Sharing Between Odyssey Feeder Links and GSO/FSS Service Links in the 29.25-29.5 GHz and 19.45-19.7 GHz Bands*, at 7 (dated Feb. 5, 1996)). A copy of the cited page is included as Appendix 2 hereto.

In this regard, subsections (b) and (d) of new Section 25.258 must be revised. Subsection (b), which appears to have been an attempt to codify the third bullet of the agreement between TRW and the GSO FSS interests,<sup>3/</sup> was not intended to minimize instances of unacceptable interference *to GSO FSS space stations*.<sup>4/</sup> Instead, it was intended to have GSO FSS operators, for beams covering the area of the feeder link ground station complexes of TRW's NGSO MSS system, select non-overlapping frequencies or utilize the opposite sense of circular polarization in order to minimize instances of unacceptable interference *to TRW's NGSO MSS space stations*. As a result, new Section 25.258(b) does not do what it is supposed to do. It should, therefore, be revised in the manner specified in Appendix 1 hereto.

Subsection (d) of new Section 25.258 has no direct antecedent in any of the materials generated during the evolution of the sharing arrangements between TRW and GSO FSS operators. Insofar, however, as subsection (d) requires *all* NGSO MSS

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<sup>3/</sup> See Appendix 2. The third bullet provides as follows:

Once Odyssey™ earth station locations and the frequency/polarity of its feeder link transmissions are defined, GSO/FSS operators will implement beam frequency selection and/or opposite sense of polarization in the vicinity of Odyssey™ earth station complexes in order to minimize instances of unacceptable interference in a manner that is consistent with their GSO beam footprint.

<sup>4/</sup> See First Report and Order, 96-311, slip op. at Appendix B, pp. 59-60 (New Section 25.258(b) of the Commission's rules).

systems — and *only* NGSO MSS systems — specifying the band 29.25-29.5 GHz to demonstrate the ability to share with Commission-authorized GSO FSS systems in the band, it is both overly broad and under inclusive. It is overly broad in that it fails to account for the fact that NGSO MSS feeder link systems of the type TRW is establishing in the 29.25-29.5 GHz band are covered by the sharing agreement; as a result, the section should not reach such a use.<sup>5/</sup> It is under inclusive in that the final sharing principle agreed by TRW and the GSO FSS interests called for additional NGSO MSS systems (i.e., systems beyond Odyssey™) that seek to use the band 29.25-29.5 GHz to demonstrate the ability to share both with Commission-authorized GSO FSS systems *and with Commission-authorized NGSO MSS feeder link systems.*<sup>6/</sup> A suggested revision of new Section 25.258(d) that corrects this situation is included in Appendix 1.

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<sup>5/</sup> As noted in the first of the sharing principles stated in Appendix 2, TRW and the GSO FSS interests contemplated that the sharing arrangements would cover the full 250 MHz at 29.25-29.5 GHz, and the arrangements were specific to NGSO MSS systems of the design of TRW's Odyssey™. See Appendix 2, hereto.

<sup>6/</sup> In this respect, the final sharing principle agreed earlier this year specifies that the sharing principles would provide a starting point for a determination as to whether additional feeder link systems could be accommodated in the band. The parties noted, however, that “[a]n additional NGSO/MSS system will be accommodated only subject to further sharing and coordination agre[e]ments that are acceptable to the affected parties.” Appendix 2 (emphasis added).

## **APPENDIX 1**

## APPENDIX 1

### § 25.258 Sharing between NGSO MSS Feeder links Stations and GSO FSS services in the 29.25- 29.5 GHz Bands

- (a) Operators of NGSO MSS feeder link earth stations and GSO FSS earth stations in the band 29.25 to 29.5 GHz where both services have a co-primary allocation shall cooperate fully in order to coordinate their systems. During the coordination process both service operators shall exchange the necessary technical parameters required for coordination.
- (b) Licensed GSO FSS systems shall, to the maximum extent possible, operate with frequency/polarization selections, in the vicinity of operational or planned NGSO MSS feeder link earth station complexes, that will minimize instances of unacceptable interference. ~~to the GSO FSS space stations.~~
- (c) NGSO MSS satellites operating in this frequency band shall compensate for nodal regression due to the oblate shape of the Earth, and thus maintain constant successive sub-satellite ground tracks on the surface of the Earth.
- (d) **Additional** NGSO MSS systems applying to use the 29.25 - 29.5 GHz band, for feeder link earth station uplink, will have to demonstrate that their system can share with the authorized U.S. GSO/FSS **and NGSO MSS** systems operating in this band.

## **APPENDIX 2**



## **Spectrum Sharing Principles Adopted by TRW and Hughes**



- **Sharing principles apply to the 29.25-29.4 GHz band and, following WRC-97, also to the 29.4-29.5 GHz band**
- **The party causing unacceptable interference has primary responsibility to mitigate the interference, but neither system shall be required to disrupt or alter its transmissions.**
- **Once Odyssey™ earth station locations and the frequency/polarity of its feeder link transmissions are defined, GSO/FSS operators will implement beam frequency selection and/or opposite sense of polarization in the vicinity of Odyssey™ earth station complexes in order to minimize instances of unacceptable interference in a manner that is consistent with their GSO beam footprint.**
- **Only NGSO/MSS systems may use the 19.3-19.7 GHz band as a companion downlink band to the 29.1-29.5 GHz uplink band. GSO/FSS systems may use any part of the 17.7-18.55 GHz band as a companion downlink band to the 29.25-29.5 GHz band.**
- **This sharing arrangement is only applicable to GSO/FSS operators and one type of NGSO/MSS system (namely, Odyssey™). An additional NGSO/MSS system will be accommodated only subject to further sharing and coordination agreements that are acceptable to the affected parties. Nevertheless, the sharing principles identified herein can be considered in attempting to reach such an accommodation.**



## **CERTIFICATE OF SERVICE**

I, Katharine B. Squalls certify that a copy of the foregoing "Petition of TRW Inc. For Clarification and/or Partial Reconsideration of the First Report and Order" was mailed, first-class postage prepaid, this 24th day of September, 1996 to each of the following:

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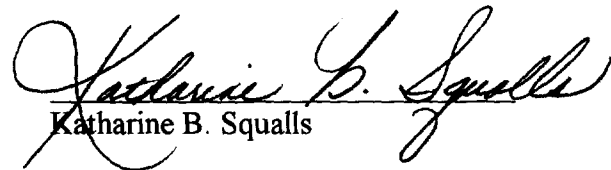
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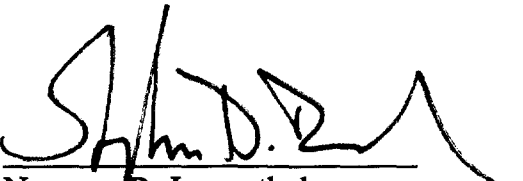
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In sum, TRW takes no issue with the Commission's decision to adopt rules that reflect the sharing principles that were agreed by TRW and the GSO FSS community earlier this year. It does have some difficulty with the manner in which these principles were converted into rule provisions in subsections (b) and (d) of new Section 25.258. TRW believes both subsections can be conformed to the agreed intentions in a relatively straightforward manner, and respectfully urges the Commission to adopt a clarifying order that makes the rule revisions that are suggested in Appendix 1 hereto.

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